- APT Rec'd PCTIPTO 2.5. MAY. 2016

Approved for use through 3/31/2007. OMB 0651-0021
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

## TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A SUBMISSION UNDER 35 U.S.C. 371

ATTORNEY'S DOCKET NUMBER 123037-06066007

7 CFR 1.5) CONCERNING A SUBMISSION UNDER 35 U.S.C. 371 INTERNATIONAL APPLICATION NO. INTERNATIONAL FILING DATE PRIORITY DATE CLAIMED 22 June 2004 PCT/KR2004/001509 25 November 2003 TITLE OF INVENTION METHOD FOR MEASURING ELECTROMAGNETIC RADIATION PATTERN AND GAIN OF RADIATOR USING TEM WAVEGUIDE APPLICANT(S) FOR DO/EO/US LEE, Ae-Kyoung; CHOI, Hyung-Do; PACK, Jeong-Ki Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information: This is a FIRST submission of items concerning a submission under 35 U.S.C. 371. This is a SECOND or SUBSEQUENT submission of items concerning a submission under 35 U.S.C. 371. This is an express request to begin national examination procedures (35 U.S.C. 371(f)). The submission must include items (5), (6), (9) and (21) indicated below. [X]The US has been elected (Article 31). A copy of the International Application as filed (35 U.S.C. 371(c)(2)) is attached hereto (required only if not communicated by the International Bureau). X has been communicated by the International Bureau. is not required, as the application was filed in the United States Receiving Office (RO/US). An English language translation of the International Application as filed (35 U.S.C. 371(c)(2)). is attached hereto. has been previously submitted under 35 U.S.C. 154(d)(4). X Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3)) are attached hereto (required only if not communicated by the International Bureau). have been communicated by the International Bureau. have not been made; however, the time limit for making such amendments has NOT expired. have not been made and will not be made. An English language translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)). An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)). 10. An English language translation of the annexes of the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)). Items 11 to 20 below concern document(s) or information included: 11. X An Information Disclosure Statement under 37 CFR 1.97 and 1.98. An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included. 13 X A preliminary amendment. An Application Data Sheet under 37 CFR 1.76. A substitute specification. 16. X A power of attorney and/or change of address letter. A computer-readable form of the sequence listing in accordance with PCT Rule 13ter.2 and 37 CFR 1.821- 1.825. A second copy of the published International Application under 35 U.S.C. 154(d)(4). A second copy of the English language translation of the international application under 35 U.S.C. 154(d)(4). Other items or information:

This collection of information is required by 37 CFR 1.414 and 1.491-1.492. The information is required to obtain or retain a benefit by the public, which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 15 minutes to complete, including gathering information, preparing, and submitting the completed form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop PCT, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Page 1 of 2

LAPS RECEPTIFIE 25 MAY 2006

PTO-1390 (Rev. 02-2005)
Approved for use through 3/31/2007. OMB 0651-0021
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

The following less hims been submitted	U.S. APPLICATION	ON NO. (if known	n, see 37 CFR 1.5	) INTERNATIONAL A	PPLICATION NO.	ATTORNEY'S DO	CKET NUMBER	
2.1 Examination fee	1							
22. Examination fee If International pretiminary examination report prepared by USPTO and all claims satisfy provisions of PCT Ancies S(1)**-(4)**-(50.00)**	The following fees have been submitted						PTO USE ONLY	
If Infernational preliminary examination report prepared by USPTO and all claims satisfy provisions of PCT Anticle 33(1)(4).  All other situations	21. X Basic national fee\$300					<sup>\$</sup> 300.00		
Search fee (37 CFR 1.445(a)(2)) has been paid on the international application to the USPTO as an International Searching Authority	If International preliminary examination report prepared by USPTO and all claims satisfy provisions of PCT Article 33(1)-(4)					\$ 200.00		
Additional fee for specification and drawings filed in paper over 100 sheets (excluding sequence listing or computer program listing filed in an electronic medium).  Total Sheets   Extra Sheets   Number of each additional 50 or fraction thereof.  Total Sheets   Extra Sheets   Number of each additional 50 or fraction thereof.  Total Sheets   Extra Sheets   Number of each additional 50 or fraction thereof.  Total Sheets   Extra Sheets   Number of each additional 50 or fraction thereof.  Surcharge of \$130.00 for furnishing the cett or declaration later than 30 months from the earliest claimed priority date (37 CPR 1.492(h)).  CLAIMS   NUMBER FILED   NUMBER EXTRA   RATE   \$  STOTAL claims   9 - 20 = 0   x \$500   \$ 0.00    Independent claims   1 - 3 = 0   x \$500   \$ 0.00    MULTIPLE DEPENDENT CLAIM(S) (if applicable)   + \$360   \$ 0.00    MULTIPLE DEPENDENT CLAIM(S) (if applicable)   + \$360   \$ 0.00    Applicant claims small entity status. See 37 CFR 1.27. Fees above are reduced by ½. \$ 500.00    SUBTOTAL = \$ 500.00    SUBTOTAL = \$ 500.00    SUBTOTAL = \$ 500.00    Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied claimed priority date (37 CFR 1.492(i)).  TOTAL NATIONAL FEE = \$ 500.00    TOTAL FEES ENCLOSED = \$ 540.00    **TOTAL FEES ENCLOSED = \$ 540.00    **Please charge my Deposit Account No. 503-121   in the amount of \$ 40.00   \$ 60.00    **Please charge my Deposit Account No. 503-121   in the amount of \$ 500.00   0 cover the above fees. A duplicate copy of this sheet is enclosed.  **District Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 503-121   A duplicate copy of this sheet is enclosed.  **District Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 503-121   A duplicate copy of this sheet is enclosed.  **District Commissioner is hereby authorized to charge any additional fees which may be req	Search fee (37 CF Internation International Sear	FR 1.445(a)(2)) had Searching Autoch Report prepar	\$ 500.00					
Total Sheets   Extra Sheets   Number of each additional 50 sheets of paper or fraction thereot.   The fee is \$250 for each additional 50 sheets of paper or fraction thereot.   Total Sheets   Extra Sheets   Number of each additional 50 or fraction thereot   Starcharge of \$130.00 for furnishing the each or declaration later than 30 months from the earliest   Surcharge of \$130.00 for furnishing the each or declaration later than 30 months from the earliest   Surcharge of \$130.00 for furnishing the path or declaration later than 30 months from the earliest   Total claims   9 - 20 = 0   x	TOTAL OF 21, 22 and 23 =					\$ 1,000.00		
Surcharge of \$130.00 for furnishing the cath or of the calculation (alter than 30 months from the earliest claimed priority date (37 CFR 1.492(h)).    CLAIMS	sequence list	ting or computer (						
Surcharge of \$130.00 for furnishing the oath or declaration later than 30 months from the earliest  CLAIMS NUMBER FILED NUMBER EXTRA RATE  Total claims 9 - 20 = 0	Total Sheets	otal Sheets Extra Sheets						
claimed priority date (37 CFR 1.492(h)).  CLAIMS  NUMBER FILED  NUMBER EXTRA  RATE  7 total claims  9 - 20 = 0	35 - 100 =	0 /50 =	(	)	× \$250	\$ 0.00		
Total claims 9 - 20 = 0			\$ 0.00					
Independent claims  1	CLAIMS NU		ER FILED	NUMBER EXTRA	RATE	\$		
MULTIPLE DEPENDENT CLAIM(S) (if applicable)  TOTAL OF ABOVE CALCULATIONS = \$ 1,000.00  Applicant claims small entity status. See 37 CFR 1.27. Fees above are reduced by ½. 500.00  Processing fee of \$130.00 for furnishing the English translation later than 30 months from the earliest claimed priority date (37 CFR 1.492(i)).  TOTAL NATIONAL FEE = \$ 500.00  Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property  TOTAL FEES ENCLOSED = \$ 540.00  Amount to be refunded: \$ anount to be charged: \$ anount to be charged: \$ a. A check in the amount of \$	Total claims	9	- 20 =	0	× \$ 50	\$ 0.00		
TOTAL OF ABOVE CALCULATIONS = \$ 1,000.00  Applicant claims small entity status. See 37 CFR 1.27. Fees above are reduced by ½. 500.00  SUBTOTAL = \$ 500.00  Processing fee of \$130.00 for furnishing the English translation later than 30 months from the earliest tailmed priority date (37 CFR 1.492(ii)).  TOTAL NATIONAL FEE = \$ 500.00  Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31) \$40.00 per property  TOTAL FEES ENCLOSED = \$ 540.00  Amount to be refunded: Amount to be refunded: Amount to be charged in the amount of \$ charged: A check in the amount of \$ cover the above fees is enclosed.  A check in the amount of \$ cover the above fees is enclosed.  Description of the cover the above fees is enclosed.  The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 503-121  in the amount of his form may become public. Credit card information should not be included on this form. Provide credit card information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.  NOTE: Where an appropriate time limit under 37 CFR 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the International Application to pending status.  SEND ALL CORRESPONDENCE TO:  Mayer Brown Rowe & Maw LLP  Intellectual Property Department  1909 K Street, N.W.  Washington, D.C. 20006	Independent claim	ns 1	- 3 =	0	× \$200	\$ 0.00		
Applicant claims small entity status. See 37 CFR 1.27. Fees above are reduced by 1/2.  SUBTOTAL = \$500.00  Processing fee of \$130.00 for furnishing the English translation later than 30 months from the earliest claimed priority date (37 CFR 1.492(i)).  TOTAL NATIONAL FEE = \$500.00  Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property  TOTAL FEES ENCLOSED = \$540.00  Amount to be refunded: Amount to be charged by 1/2.  A check in the amount of \$	MULTIPLE DEPENDENT CLAIM(S) (if applicable) + \$360					\$ 0.00		
SUBTOTAL = \$ 500.00  Processing fee of \$130.00 for furnishing the English translation later than 30 months from the earliest claimed priority date (37 CFR 1.492(i)).  TOTAL NATIONAL FEE = \$ 500.00  Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property + TOTAL FEES ENCLOSED = \$ 540.00  TOTAL FEES ENCLOSED = \$ 540.00  Amount to be refunded: \$ Amount to be charged: \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	TOTAL OF ABOVE CALCULATIONS =					\$ 1,000.00		
Processing fee of \$130.00 for furnishing the English translation later than 30 months from the earliest claimed priority date (37 CFR 1.492(i)).  TOTAL NATIONAL FEE = \$500.00  Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property + 40.00  TOTAL FEES ENCLOSED = \$540.00  Amount to be refunded: Amount to be charged: \$500.00  Please charge my Deposit Account No. 503-121 in the amount of \$540.00 to cover the above fees. A duplicate copy of this sheet is enclosed.  Diagram of the commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 503-121 in the amount of this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.  NOTE: Where an appropriate time limit under 37 CFR 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the International Application to pending status.  SEND ALL CORRESPONDENCE TO: Mayer Brown Rowe & Maw LLP Intellectual Property Department  1909 K Street, N.W.  Washington, D.C. 20006	Applicant claims small entity status. See 37 CFR 1.27. Fees above are reduced by 1/2.					- 500.00		
talamed priority date (37 CFR 1.492(i)).  TOTAL NATIONAL FEE = \$ 500.00  Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property + \$ 40.00  TOTAL FEES ENCLOSED = \$ 540.00  Amount to be refunded: Amount to be charged:  Amount to be charged:  TOTAL FEES ENCLOSED = \$ 540.00  Amount to be charged:  TOTAL FEES ENCLOSED = \$ 540.00  Amount to be charged:  TOTAL FEES ENCLOSED = \$ 540.00  Amount to be charged:  TOTAL FEES ENCLOSED = \$ 540.00  Amount to be charged:  TOTAL FEES ENCLOSED = \$ 540.00  Amount to be refunded:  Amount to be charged:  TOTAL FEES ENCLOSED = \$ 540.00  Amount to be refunded:  Amount to be charged:  TOTAL FEES ENCLOSED = \$ 540.00  Amount to be refunded:  Amount to be charged:  TOTAL FEES ENCLOSED = \$ 540.00  Amount to be refunded:  Amount to be charged:  TOTAL FEES ENCLOSED = \$ 540.00  Amount to be refunded:  Amount to be charged:  TOTAL FEES ENCLOSED = \$ 540.00  Amount to be refunded:  Amount to be charged:  TOTAL FEES ENCLOSED = \$ 540.00  Amount to be refunded:  Amount to be charged:  TOTAL FEES ENCLOSED = \$ 540.00  Amount to be refunded:  Amount to be charged:  TOTAL FEES ENCLOSED = \$ 540.00  Amount to be refunded:  Amount to be charged:  TOTAL FEES ENCLOSED = \$ 540.00  Amount to be refunded:  Amount to be charged:  TOTAL FEES ENCLOSED = \$ 540.00  Amount to be refunded:  Amount to be charged:  TOTAL FEES ENCLOSED = \$ 540.00  Amount to be refunded:  Amount to be charged:  TOTAL FEES ENCLOSED = \$ 540.00  Amount to be refunded:  Amount to be charged:  TOTAL FEES ENCLOSED = \$ 540.00  Amount to be charged:  TOTAL FEES ENCLOSED = \$ 540.00  Amount to be refunded:  TOTAL FEES ENCLOSED = \$ 540.00  Amount to be refunded:  TOTAL FEES ENCLOSED = \$ 540.00  Amount to be refunded:  TOTAL FEES ENCLOSED = \$ 540.00  Amount to be charged:  TOTAL FEES ENCLOSED = \$ 540.00  Amount to be refunded:  TOTAL FEES ENCLOSED = \$ 540.00  Amount to be charged:  TOTAL FEES ENCLOSED = \$ 540.00  Amount to be charged:  TOTA	SUBTOTAL =					\$ 500.00		
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property						\$ 0.00		
to cover the above fees is enclosed.  A check in the amount of \$	TOTAL NATIONAL FEE =					\$ 500.00		
Amount to be refunded: Amount to be charged:  a. A check in the amount of \$						\$ 40.00		
a. A check in the amount of \$	TOTAL FEES ENCLOSED =					\$ 540.00		
a. A check in the amount of \$							\$	
b. A please charge my Deposit Account No. 503-121 in the amount of \$ 540.00 to cover the above fees.  A duplicate copy of this sheet is enclosed.  c. The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 503-121 A duplicate copy of this sheet is enclosed.  d. Fees are to be charged to a credit card. WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.  NOTE: Where an appropriate time limit under 37 CFR 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the International Application to pending status.  SEND ALL CORRESPONDENCE TO:  Mayer Brown Rowe & Maw LLP  Intellectual Property Department  1909 K Street, N.W.  Washington, D.C. 20006  A duplicate copy of this sheet is enclosed.  SIGNATURE  Yoon S. Ham  NAME  45,307						1	\$	
A duplicate copy of this sheet is enclosed.  c. The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 503-121 A duplicate copy of this sheet is enclosed.  d. Fees are to be charged to a credit card. WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.  NOTE: Where an appropriate time limit under 37 CFR 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the International Application to pending status.  SEND ALL CORRESPONDENCE TO:  Mayer Brown Rowe & Maw LLP  Intellectual Property Department  1909 K Street, N.W.  Washington, D.C. 20006  Additional fees which may be required, or credit any overpayment to Deposit  Account No. 503-121 Sheet is enclosed.  SIGNATURE  Yoon S. Ham  NAME  45,307	a. A check in the amount of \$ to cover the above fees is enclosed.							
Account No. 503-121 A duplicate copy of this sheet is enclosed.  d. Fees are to be charged to a credit card. WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.  NOTE: Where an appropriate time limit under 37 CFR 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the International Application to pending status.  SEND ALL CORRESPONDENCE TO:  Mayer Brown Rowe & Maw LLP  Intellectual Property Department  1909 K Street, N.W.  Washington, D.C. 20006  45,307								
be included on this form. Provide credit card information and authorization on PTO-2038.  NOTE: Where an appropriate time limit under 37 CFR 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the International Application to pending status.  SEND ALL CORRESPONDENCE TO:  Mayer Brown Rowe & Maw LLP  Intellectual Property Department  1909 K Street, N.W.  Washington, D.C. 20006  45,307								
and granted to restore the International Application to pending status.  SEND ALL CORRESPONDENCE TO:  Mayer Brown Rowe & Maw LLP  Intellectual Property Department  1909 K Street, N.W.  Washington, D.C. 20006  SIGNATURE  Yoon S. Ham  NAME  45,307								
SEND ALL CORRESPONDENCE TO:  Mayer Brown Rowe & Maw LLP  Intellectual Property Department  1909 K Street, N.W.  Washington, D.C. 20006  SIGNATURE  Yoon S. Ham  NAME  45,307	NOTE: Where an appropriate time limit under 37 CFR 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed							
Mayer Brown Rowe & Maw LLP Intellectual Property Department 1909 K Street, N.W.  Washington, D.C. 20006  SIGNATURE Yoon S. Ham NAME 45,307			A)					
Intellectual Property Department 1909 K Street, N.W.  Washington, D.C. 20006  Yoon S. Ham NAME 45,307					/ Und	al lin-		
1909 K Street, N.W.  NAME  Washington, D.C. 20006  45,307	-							
Washington, D.C. 20006 45,307						am		
16061 600 0600   DIODUOTO 16061 600 0600   BOSHING			202) 263-5280	Facsimile		ON NUMBER		